Women's Property Rights and Outreach of Microfinance Institutions Targeting Women

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Abstract

The right to legally own and control property is vital to the ability of an individual to receive credit. Women in developing countries often lack property rights and are therefore at a disadvantage when applying for loans. In addition, even where women have been granted equal or near-equal rights as men, there is often a disconnect between what is codified as law and what occurs in practice. Therefore, I seek to examine how women's property rights, both as codified and in enforcement, affect outreach activities of Microfinance Institutions (MFIs) serving women. I initially hypothesized that in MFIs targeting women, the breadth of outreach to women would be positively affected by both the legal strength and enforcement of women's property rights. Results of a Heckman selection model and a Seemingly Unrelated Regression model both contradict that initial hypothesis, instead showing that MFIs give a far greater portion of their loan funds to women clients in countries with more discriminatory women's property rights, and that enforcement of property rights does not show any significant effect on the ability of MFIs to reach women borrowers.

Introduction

The right to legally own and control property is vital to the ability of an individual to receive credit. Women in developing countries often lack property rights and are therefore at a disadvantage when applying for loans (Duflo, 2012; Fletschner, 2009). In addition, even where women have been granted equal or near-equal rights as men, there is often a disconnect between what is codified as law and what occurs in practice (Peterman, 2011; Deere and Leon, 2003). Microfinance Institutions (MFIs) have been hailed in recent years as the solution for the lack of credit available not only to the poor but specifically to poor women. Thus, I believe it is important to evaluate if and how differences in property rights across countries affect the ability of MFIs to reach women clients who use microloans to manage family finances or undertake entrepreneurial activities. I hypothesize that an MFI's ability to reach women clients must be affected by property rights laws and their enforcement, perhaps differently. Therefore, I seek to examine how women's property rights, both as codified and in practice, affect the outreach of MFIs serving women. I initially hypothesize that in MFIs targeting women, the breadth of outreach to women would be positively affected by the strength and enforcement of women's property rights.

Background Literature

Secure property rights are an essential cornerstone to economic development. The strength of property rights varies widely across the developing world. La Porta et al. (1997), in studying the differences in capital market sizes across 49 countries, categorized the historical origins of a country's legal system and evaluated them in terms of the strength of investor protection. "English law is common law, made by judges and subsequently incorporated into legislature. French, German, and Scandanavian laws, in contrast, are part of the scholar and legislator-made civil law tradition, which dates back to Roman law" (La Porta et al., 1997). They note that legal systems based off English common law have stronger protections for private investors, while those based off French civil law – which includes much of Sub-Saharan Africa, as former French colonies – have the weakest.

Mijiyawa (2013) articulates and investigates the validity of four theoretical explanations for the heterogeneity of property rights institutions across countries. First, the economic approach argues that property rights institutions are created to most efficiently maximize total societal income. Second, the cultural approach argues that ideological or religious beliefs have shaped the institutions both by defining what is most beneficial for members of the society and by encouraging or discouraging collective action. Third, the historical approach suggests that the historical origin of a country's legal system is the defining factor, especially when considering countries previously under colonial control by France or England. Fourth, the political approach argues that the individuals with political power in a country will create or change institutions for their personal gain rather than to maximize societal well-being. Mijiyawa's cross-sectional analysis of 142 countries from 1970-2005 indicates that "the political approach… [is] the most statistically robust, it also provides the best fit with the property rights index" (Mijiyawa, 2013).

Given the extraordinarily low proportion of women in political power in developing countries, this argument could be extended to include the entrenchment of gender-biased laws which serve to increase the wealth and power of men. Additionally, the analysis showed that property rights institutions in developing countries were significantly affected by the historical hypothesis, that is by the origin of their legal system. Mijiyawa also notes that African countries did not follow the full sample's trend of improvements in property rights institutions correlating with increases in GDP per capita.

De Soto (2000) points to the lack of formal property rights, specifically in the area of land titling, as a major obstacle to economic development, preventing the rural poor from using their land as collateral in accessing credit. Increasing tenure security also encourages investment in land (and other assets) as it ensures the owner will reap the future rewards of investment (FAO, 2002). Land rights may come at multiple levels: private property, communal property, open access property, or state controlled property, depending who is allowed use of or access to the land. Three key types of land rights include the right of usage, for grazing or for growing crops; the right of control, the ability to make decisions over the use of the land and benefit financially from the sale of crops; and transfer rights, the right to sell, mortgage, or convey the land to others.

In many parts of the developing world, historically patriarchal and tribal property rights regimes have left women without a secure claim to property – especially land – of their own (Deere, 2003). Women – in the cases of both widows and daughters – are frequently excluded from inheriting property, and a married woman may only have access "mediated through her husband or other male family members" (Agarwal, 1994). Women frequently only have use rights over the family land where they produce the majority of household food, while the

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husband retains control rights, creating a "discrepancy between decision-making powers and labour input" (FAO, 2002). Previous literature has stressed the increased efficiency and output on land where property rights are secure, specifically in terms of women's investment in agricultural infrastructure on plots of land over which they have secure rights compared to the lack of investment on plots over which their rights are insecure (FAO, 2002; Joireman, 2008). Deere (2013) notes that in Ecuador, which provides for partial community property and inheritance rights for all children, married women own 44% of couple wealth. In comparison, married women only own 19% of couple wealth in Ghana and 9% in the Indian state of Karnataka, "which are characterized by the separation of property regime which does not recognize wives' contribution to the formation of marital property, and by inheritance practices that are strongly male biased" (Deere, 2013).

Many developing countries in Sub-Saharan Africa and Southeast Asia have recently begun land-titling initiatives both to encourage this type of infrastructure investment and to allow the rural poor to use their land as collateral for accessing formal credit markets, thus encouraging economic development (DeSoto, 2000). However, in many cases these titling processes have simply formalized the property rights of men and ignored the co-ownership of property within the marriage. In those countries where spousal co-ownership and women's inheritance rights have been written into law, there is a lack of both education – ensuring that women know their rights – and enforcement – especially in rural areas – of these legal changes, which means that women's de facto rights are still insecure (Joireman, 2008; Peterman, 2011; Agarwal, 1994).

In many cases, the failure to enforce women's property rights appears to be rooted in cultural values that are at sharp variance from relatively new legal protections (Agarwal, 1994). Even when laws have been put in place to establish legal rights, the absence of support and

enforcement of these rights remains a significant problem. Knox (2002) refers to this problem as a form of legal pluralism, that a formal legal system may coexist with a set of locally practiced customs or rules providing a normative framework that govern property rights. The operation of customary law and gender divisions of labor in Sub-Saharan Africa are described by Joireman (2008) as serious impediments to independent property rights and access to credit by women. Given these limitations on women's property rights, it should come as no surprise that poor women face significant credit constraints. Peterman (2011) argues that such constraints hold back not only the economic development of women but of whole societies, and that future research is needed "to examine impacts, trends, and gaps between *de jure* and *de facto*" women's property rights.

Microfinance Institutions (MFIs) are leading the effort to find innovative ways to extend credit and other financial services to the poor. MFIs utilize a variety of lending methodologies to avoid the issue of collateral, including group lending where in lieu of the threat of seized collateral, social pressures from the other group members encourage loan repayment – this is frequently termed "social collateral" – because a default by one group member must be paid for by the rest of the group (Brau 2004). Some MFIs use additional collateral alternatives like forced saving, requiring a small percentage of the loan to be contributed as a kind of insurance policy or forced collateral (Morduch 1999).

MFIs are burdened by having the dual goals of maintaining sustainability as a financial institution – covering their costs of operation, ensuring repayment of loans from clients with little or no collateral or credit history – and simultaneously acting to alleviate poverty by giving credit to the poorest clients (Brau 2004). Two measurements of MFIs' effectiveness in the second goal, of poverty alleviation, have dominated the literature: depth of outreach, measuring

the level of poverty of an MFI's clients, and breadth of outreach, measuring the ability of an MFI to reach a large number of poor clients.

Many MFIs choose to target women clients both because they are the most underserved by the traditional banking sector but also because "women invest the money in goods and services that improve the well-being of families, in goods that are conducive to development" (Duflo, 2012). Allendorf (2007) notes in the case of Nepal that "Women who own land are significantly more likely to have the final say in household decisions, a measure of empowerment. Similarly, children of mothers who own land are significantly less likely to be severely underweight." Fletschner (2011) makes a similar argument that increasing rural women's access to credit not only offers an avenue for increasing production but additionally increases women's intrahousehold bargaining power, leading to "both a more efficient allocation of resources, with family producing more with the same resources, and to better human capital outcomes such as improved health, nutrition and education in their families."

While MFIs may often choose to focus their efforts toward lending to female borrowers, given the evidence noted above that credit to women has immensely positive effects on poor families, there may still be some gender discrimination at play in the size of MFI loans offered to women versus men. Agier and Szafarz (2013) found a "glass ceiling" effect on the size of loans, where women were given loans smaller than men, especially when comparing clients with larger projects, after correcting for expected creditworthiness.

Data and Empirical Models

My empirical approach is to identify how property rights and their enforcement affect MFI outreach and, in particular, MFI outreach to women borrowers. My unique data contains information on whether MFIs explicitly identify themselves as targeting women. Thus, when studying how outreach to women is affected by property rights and their enforcement, I must account for potential selection biases. First, MFIs with lending methodology most appropriate to serving women borrowers and savers are most likely to explicitly target women. Second, the decision to target women borrowers is arguably endogenous to the property rights environment. MFIs targeting women may have selected to work in countries that have less strong women property rights protection to help women in these countries while covering costs. To address this self-selection issue I use a Heckman selection model where I instrument for the self-selection to target women clients in a country. I use the provision of a group loan as an instrument, because the literature suggests that group loans target predominantly poor women (Duflo, 2012). Thus I create an instrument variable taking the value of one if the majority (greater than 50% by either number of loans outstanding or portion of gross loan portfolio) of loans offered by an MFI were structured as group (including both village bank and solidarity group loan subtypes) and zero otherwise[1]. I argue that offering group loans reflects an MFI's choice to explicitly target women but not necessarily the ability to reach women and the poor because the MFIs have the flexibility to add other lending methodology.

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[1] I additionally estimated models where the dummy took on a value of one if the MFI offered any group loans and zero otherwise, but the results did not change substantially.

Stage 1 Heckman:

$$\begin{aligned}
\frac{targets}{women} = \beta_0 &+ \lambda_1 \cdot \begin{matrix} better \\ property\ rights \\ enforcement \end{matrix} + \lambda_2 \cdot \begin{matrix} less\ equal \\ property \\ rights\ laws \end{matrix} + \lambda_3 \cdot \begin{matrix} discriminatory \\ property \\ rights\ laws \end{matrix} + \sum_{i=1}^{N} \beta_i X_i \\
&+ \sum_{j=1}^{M} \beta_j M_j + \gamma_i \cdot \begin{matrix} majority \\ group\ lending \\ methodology \end{matrix} + u_{ij}
\end{aligned}$$

Stage 2 Heckman:

$$\begin{aligned}
\frac{outreach}{to\ women} = \beta_0 &+ \lambda_1 \cdot \begin{matrix} better \\ property\ rights \\ enforcement \end{matrix} + \lambda_2 \cdot \begin{matrix} less\ equal \\ property \\ rights\ laws \end{matrix} + \lambda_3 \cdot \begin{matrix} discriminatory \\ property \\ rights\ laws \end{matrix} \\
&+ \sum_{i=1}^{N} \beta_i X_i + \sum_{j=1}^{M} \beta_j M_j + \varepsilon_{ij}
\end{aligned}$$

Outreach is measured by two variables which capture different aspects of MFI outreach to women. The first variable is the percent of an MFI's borrowers who are female (a measure of breadth of female outreach). The second variable measures the percent of an MFI's gross loan portfolio loaned to female borrowers (volume of money loaned to females). The focus of my analysis is on the property rights enforcement and law variables, which are discussed in further detail below. The other independent variables represent an extensive list of controls identified by the literature as likely to affect the social performance of the MFIs. At the firm level, X_i includes the logged value of MFI assets (to control for scale), the number of years the MFI has been in business, the extent to which the MFI is leveraged (ratio of liabilities to assets), return on assets (ROA), the legal type of the MFI, whether the MFI also offers a savings product, and whether the MFI offers additional non-financial services to support the MFI's activities (Hartarska et al., 2011; Delgado et al., 2014; Hartarska et al., 2010). Additional country-level variables in M_j

include a measure of women's representation in MFI governance (Duflo et al., 2010), population density, per-capita gross domestic product (GDP), and the depth of the credit markets measured by the amount of domestic credit provided by the financial sector as a percentage of GDP.

The dataset has been constructed from three sources. First, unique data on country level women's property rights comes from the Woman Stats Project which has created two measures to describe the degree of discrimination in property rights in practice and in law. Data on individual MFIs comes from the MixMarket database. Financial variables were downloaded from Cross-Market Analysis reports (MM CMA), while variables regarding the non-financial services and target markets were drawn from Social Performance surveys (MM SP). MixMarket's financial data is collected from MFIs which volunteer such data. A smaller set of MFIs fill out the Social Performance survey thus suggesting possible self-selection issues. Macroeconomic indicators and country controls were collected from the World Bank's World Development Indicators dataset (WDI). Firm and country level variables and sources are listed in Table 1.

The largest dataset contains financial and social performance data for 702 MFIs from the year 2012, from 67 different countries. Of those 702 MFIs, 560 reported that women were one of their target client groups. Of the entire group of MFIs, 68% of borrowers are female. This value increases to 70% in the set of MFIs targeting women clients and drops to 49% in those MFIs not targeting women clients. The percent of gross loan portfolio to women is 62% in the full sample, 65% in the target group, and 42% in the non-target group.

A smaller subsample of these MFIs was used for further analysis because detailed data were not available for all the original 702 observations. The data subset for the regression

consists of 322 MFIs, 287 (or 89%) of which target women clients, from 48 different countries. Summary statistics on this dataset are presented in Table 2.

A robustness check was performed to study how outreach in all its dimensions is affected by women's property rights. A Seemingly Unrelated Regressions (SUR) analysis used two classic dependent variables to measure two other aspects of outreach: the number of active borrowers – to show breadth of outreach – and average balance per borrower scaled by gross national income (GNI) – to show depth of outreach. There is no statistical difference between the groups for breadth of outreach by MFIs targeting women and MFIs not targeting women, but there is a significant difference for depth of outreach. The average balance per borrower scaled by GNI is 0.421 in the full group of MFIs, 0.375 in the targeting group of MFIs, and 0.795 in the non-targeting group of MFIs, indicating that the MFIs that target women reach a poorer clientele overall (Table 2).

In the descriptive statistics part of the analysis I first compare the groups of MFI that target and do not target women to frame the analysis only on MFIs explicitly targeting women and thus use the data to control for MFI self-selection into those with a special mission to help women clients. The main variables of interest are those capturing property rights laws and their enforcement. I use two variables from the Woman Stats Project (http://womanstats.org) which were designed to measure the level of discrimination in women's property rights in a country. The first quantifies "to what degree women have real property and land ownership rights in practice (as versus law)" and takes on values of 0 for non-discriminatory enforcement, 1 for somewhat discriminatory enforcement, or 2 for discriminatory enforcement (WomanStats Codebook). This variable is a scale variable incorporating information gathered on a country-by-country basis on several aspects of women's land ownership and property rights, including

customs regarding polygyny, customs regarding divorce, wives' inheritance rights in practice, daughters' inheritance rights in practice, division of assets and alimony customs for couples with children, religious or ethnic differences in how women are allowed access and control over property or credit, and the frequency with which women face discrimination in business activities or in access to credit. Coding a country as non-discriminatory means that women have individual access to property, land, credit, and business ownership, husbands and wives share control of common property within the marriage, and upon dissolution of marriage (whether by death or divorce) women receive an equitable division of marital property. In countries with somewhat discriminatory property rights practices, women have some independence to buy, sell, and own property, but there are instances of discrimination and women at times require the consent of a husband or father for transactions, sons generally inherit more than daughters, widows tend to inherit less of the estate than other survivors, marital property may be controlled jointly but may be titled only under the husband's name, and a married woman requires her husband's consent to engage in transactions regarding property held in her name. Finally, a country with discriminatory property rights excludes women from the ownership of property in practice, daughters and widows do not receive equitable inheritances, and family assets are managed by the husband as head of household.

The second variable quantifies "to what degrees codified law protects women's property rights" and takes on values of 0 for comprehensive laws, 1 for somewhat comprehensive/somewhat discriminatory laws, or 2 for discriminatory laws (WomanStats Codebook). The same aspects of women's rights are considered as for the previous variable, but considered in light of what is codified in law. In cases where "customary law takes precedence or is equal to/over codified law," the data is interpreted as law, not as practice. Otherwise, data on

customary laws are included in the scaling of property rights in practice. Comprehensive property rights laws exist when women are granted equal access and use of property and credit, allowed equal opportunities for business ownership, women have independent control over their property, marital property is jointly owned and managed, marital property is divided equally upon divorce, widows and daughters receive equitable inheritances, and customary or religious laws that contradict any of the above are strictly subservient to the law. In countries with somewhat comprehensive but somewhat discriminatory laws, the subservience of contradictory religious or customary laws is not strictly stated, women may have independent control over the ownership, use, and transfer of property but her marital status may affect the degree of independence, marital property may be jointly managed or managed solely by one spouse, property acquired during the marriage may be considered jointly owned for the purpose of usage and disposal rights, but may only be titled in the husband's name, widows and daughters inherit but may not inherit equitably. Discriminatory laws do not require that women have equal access to and ownership of property and credit, do not guarantee women equal business opportunities, may require a man's consent or interference in the transfer of property owned by a women, explicitly state that daughters inherit less than sons and may not inherit at all if they are married, recognizes the husband as head of household in charge of marital property, and generally disinherits widows in favor of a male relative.

The property rights enforcement scale value is significant at the 10% level between MFIs targeting women and not targeting women, with mean values of 1.854 in the entire group, 1.871 in the targeting group, and 1.714 in the non-targeting group. The property rights law scale value is not significant in the simple t-test of means; 0.671 for the entire group, 0.672 for the targeting group, and 0.657 for the non-targeting group.

Turning to financial indicators, there are no statistically significant differences in age of the MFI, assets, gross loan portfolio, number of loans outstanding, liabilities-to-assets ratio, return on equity, return on assets, or operational self-sufficiency between targeting MFIs and non-targeting MFIs. Once we separate the gross loan portfolio and number of loans outstanding by lending methodology, however, we see a difference. The percent of the gross loan portfolio by group lending methodology (including both village bank and solidarity group methods) for all MFIs is 42.9%, for MFIs targeting women is 46%, but for MFIs not targeting women it drops to 15.7%. Similarly, the number of loans outstanding by group methodology is 48.5% for the whole group, increases to 52.3% for the targeting group, and drops to 16.9% for the non-targeting group. For analysis, I created a single dummy variable to indicate whether more than 50% of either the gross loan portfolio or the loans outstanding used group lending methodology. Half of the MFIs in the sample met this criterion, as did 54% of the MFIs targeting women, but only 17% of the MFIs not targeting women. These data support using group loans as an instrumental variable in the first stage Heckman model.

Some MFIs offer additional financial and non-financial services. There is no significant difference in the percentage of MFIs that offer deposit services between the targeting and non-targeting subsets. However, once we turn our attention to non-financial services, the difference becomes clearer. MixMarket's Social Performance questionnaire categorized these additional services into four types: women empowerment services, health services, education services and enterprise services. MFIs that target women clients are significantly more likely to offer one or more of these services. For ease of analysis I created a dummy variable, *mfiplus*, to capture whether an MFI offered at least one of those four services. In the complete group, 74% of MFIs

offered additional non-financial services, and 79% of MFIs that target women clients did so, compared to only 34% of MFIs not targeting women clients.

No significant differences appear when analyzing the various legal statuses of MFIs. In the entire group of 322 MFIs, 24 were classified as Banks, 53 as Credit Unions/Cooperatives, 107 as Non-Bank Financial Institutions (NBFIs), 130 as Non-Governmental Organizations (NGOs), 5 as Rural Banks, and 3 as Other. Clearly in the majority are NBFIs and NGOs.

Finally, four variables from the World Bank's World Development Indicators are included: the proportion of seats held by women in national parliaments, population density (measured in people per square kilometer), domestic credit provided by the financial sector (scaled as percent of GDP), and GDP per capita (in current US $ thousands). Approximately 22% of parliament seats are held by women across both groups. Population density is statistically different between groups, as there are 194 people per square kilometer in the full group, 209 in the targeting group, and only 73 in the non-targeting group. Domestic credit as percent of GDP is not statistically different between the full group, 49.6%, the targeting group, 49.8%, and the non-targeting group, 47.5%. Per capita gross domestic product does show statistical significance in the t-test, with 4.24 in the full group, 4.07 in the targeting group, and 5.67 in the non-targeting group.

Tables 3 and 4 summarize the distribution of the two property rights scale variables across MFIs and across countries. These tables show that the values of the enforcement of property rights scale are not widely distributed in the sample set. None of the MFIs in the analysis come from countries with non-discriminatory, or zero-value on the scale, property rights enforcement. Less than 15% of the MFIs come from countries with somewhat discriminatory

enforcement, and the vast majority (275 out of the 322 MFIs and 40 out of the 48 countries in the sample) had discriminatory property rights enforcement. The codified laws, on the other hand, skew toward a majority (58% of MFIs, 22 out of 48 countries) non-discriminatory. And although 20 out of the 48 countries rank as having discriminatory property rights laws, those countries make up only about 25% of the MFIs in the sample set.

Although concrete conclusions cannot be drawn from these summary statistics, the significant skewness of the property rights scale variables across countries and MFIs in the sample set encourages the hypothesis that there are correlations to be discovered in further analysis. Because of the small value spread, and because the index values are arbitrary, dummy variables were created for each of the scale values.

Heckman Selection Model Results

A Heckman selection model first investigates the choice of MFIs to target female clients and then models the success of those MFIs which target female clients. As noted above, MFIs are more likely to target women if they make use of group lending methods, thus the creation of a dummy instrument indicating whether the majority of loans (measured by dollar value or by number of loans) use either a solidarity group or village bank method. Table 5a shows the results of two Heckman models using the percent of female borrowers for the outreach to women variable, adding country dummies to the regression in the second model. Table 5b shows two additional models which use instead the percent of gross loan portfolio to female borrowers for the outreach to women variable, both with and without country dummies.

Results show that overall the country effects largely capture the women's property rights effects, at least as measured by the indices used here. The selection equation has a significant

inverse Mills ratio when the country effects are not included but are insignificant when country effects are included. The instrument is still significant, however, suggesting this is a plausible use. To prevent perfect collinearity, the dummy variable representing non-discriminatory laws was dropped, therefore the coefficients for the other two dummy variables represent the difference in outreach to women from the base value of the outreach in a country with non-discriminatory (law code 0) laws. MFIs in countries with law codes classified as somewhat discriminatory are able to reach approximately 26% more women clients relative to MFIs in a country with law code equal to 0 (non-discriminatory laws). Similarly, MFIs in countries classified as very discriminatory property rights laws reach approximately 23% more women clients, as compared to MFIs in countries with non-discriminatory laws. Nearly the same effect is found for the percentage of gross loan portfolio dependent variable, where the percentage of loans to women clients increases by about 25% for each law scale dummy. However, when country dummies are included in the regression for percentage women borrowers, they sweep away the independent index effect and suggest that the overall country effect captured by the country dummies incorporate, to a large extent, the codified law. A significant effect remains (and grows in strength) in the gross loan portfolio model, though, showing approximately a 170% increase in the percentage of gross loan portfolio to women clients in a country with somewhat discriminatory laws relative to non-discriminatory laws, and a 45% increase in a country with very discriminatory laws.

More succinctly, MFIs give a far greater portion of their loan funds to women clients in countries with more discriminatory women's property rights. When the country dummies are omitted from the regression, MFIs are approximately 78% less likely to target women clients in countries where the enforcement of property rights is given a scale value of 1 (marginal

enforcement) relative to a country with scale value of 2 (poor enforcement). Increasing values of the property rights law scale reduce the likelihood that an MFI in that country will target women. Again, however, the addition of country dummies to the regressions removes significance from these coefficients.

Focusing only on those variables with significant coefficients in the models that include country dummies, a few interesting effects appear. Older MFIs reach a smaller percentage of women clients. Credit unions/cooperatives, non-bank financial institutions and NGOs reach larger percentages of women clients than banks (the omitted base dummy), rural banks and other legal statuses. If an MFI offers deposit services to its clients, a smaller portion of the gross loan portfolio goes to women clients. MFIs with NGO legal status give about 19% more of their gross loan portfolio to women clients, controlling for the MFIs self-selection. As the size of the traditional domestic credit market increases, a slightly smaller portion of loan funds go to women clients; as per capita GDP increases, the amount of loan funds to women clients increases. The only variable which remains statistically significant in the selection equation after the addition of country dummies is *mfiplus*, which indicates whether an MFI offers additional non-financial services (including enterprise, education, health and women empowerment services). This result is consistent with the literature which states that the original success of the microfinance in servicing women was partially due to the fact that via group loans MFIs helped create social capital and skills that complemented women's ability to responsibly use money to meet family and business needs (Duflo, 2012). As seen clearly in the summary statistics earlier, an MFI offering any of these additional services are far more likely to target women clients.

Robustness Check: Seemingly Unrelated Regression Results

Next, I attempt to address another aspect of MFI's ability to reach women clients, namely the need to consider their outreach to women clients in the context of fulfilling their overall mission: reaching as many clients and as poor of clients as possible (breadth and depth of outreach). The number of active borrowers, a measure of the breadth of outreach, and the average loan balance (scaled by gross national income), a measure of the depth of outreach, are the other two factors considered. Since the results in these two dimensions of outreach are likely endogenous to the outreach to women, I estimate a system of equations in a Seemingly Unrelated Regression (SUR) context. The dependent variables measure the outreach to women, breadth of outreach and depth of outreach, using the same sets of MFI-specific control variables (X_i) and macroeconomic control variables (M_j) as in the previous second-stage Heckman model.

$$\begin{bmatrix} \begin{aligned} & \text{outreach} \atop \text{to women} = \beta_0 + \lambda_1 \cdot {\text{better} \atop \text{property rights} \atop \text{enforcement}} + \lambda_2 \cdot {\text{less equal} \atop \text{property} \atop \text{rights laws}} + \lambda_3 \cdot {\text{discriminatory} \atop \text{property} \atop \text{rights laws}} + \sum_{i=1}^{N} \beta_i X_i + \sum_{j=1}^{M} \beta_j M_j + \varepsilon_{ij} \\ & \text{breadth of} \atop \text{outreach} = \beta_0 + \lambda_1 \cdot {\text{better} \atop \text{property rights} \atop \text{enforcement}} + \lambda_2 \cdot {\text{less equal} \atop \text{property} \atop \text{rights laws}} + \lambda_3 \cdot {\text{discriminatory} \atop \text{property} \atop \text{rights laws}} + \sum_{i=1}^{N} \beta_i X_i + \sum_{j=1}^{M} \beta_j M_j + \varepsilon_{ij} \\ & \text{depth of} \atop \text{outreach} = \beta_0 + \lambda_1 \cdot {\text{better} \atop \text{property rights} \atop \text{enforcement}} + \lambda_2 \cdot {\text{less equal} \atop \text{property} \atop \text{rights laws}} + \lambda_3 \cdot {\text{discriminatory} \atop \text{property} \atop \text{rights laws}} + \sum_{i=1}^{N} \beta_i X_i + \sum_{j=1}^{M} \beta_j M_j + \varepsilon_{ij} \end{aligned} \end{bmatrix}$$

Results for the SURs using percent female borrowers as the outreach to women clients measure alongside the breadth and depth of outreach variables are presented in Table 6a. The SURs using percent of gross loan portfolio to women clients are presented in Table 6b. The first model in each table omits country dummies, while the second model includes them. The results on the role of codified law are repeated here, where the more discriminatory the laws, the higher the outreach to women, by approximately 18% per increase in scale. In these regressions, too, the

independent effects of women's property rights law are largely absorbed in the country effect. Additionally, there are effects on the breadth and depth of outreach measures which appear only when country dummies are not included in the model. Breadth of outreach (number of active borrowers) decreases by 170,000 as the enforcement of women's property rights becomes marginal relative to that in countries with poor enforcement, according to the results from the SUR model where gender outreach is measured by the percent female borrowers. Depth of outreach (measured by a reduction in average loan balance scaled by GNI) increases once the property rights laws reach the very discriminatory level for the systems with both outreach for women dependent variables. These data may suggest that in countries with poorly defined and badly enforced property right MFIs are pushing toward reaching poorer (women) borrowers because banks might have attracted the better off women and marginal clients. In the model using percent of women borrowers, this effect persists even when country dummies are added. When the outreach to women dependent variable is percent gross loan portfolio to women, more discriminatory laws are associated with increase in breadth of outreach, again suggesting that MFIs reach more and poorer female clients as their competition likely serves what MFIs would have served in countries with less discriminatory laws. Interestingly, marginally discriminatory laws show an increase of 186,000 borrowers relative to non-discriminatory laws, while very discriminatory laws only increase breadth of outreach by 133,000 borrowers. If an MFI offers additional services (*mfiplus*), both measures of outreach to women go up, both with and without country dummies.

CONCLUSION

The results of both regression analyses support the argument that Microfinance Institutions are successfully using non-traditional lending methodology to surmount the lack of

property rights – and therefore lack of collateral – of women in these developing countries. These results may suggest that MFIs are effectively positioning themselves in the markets where they can do the most good, where women lack the property rights to gain access to traditional credit sources. Or, these results may suggest that in countries with less discriminatory property rights, women are able to receive credit via traditional banking, instead of resorting to the non-traditional MFIs. Surprisingly, the enforcement of property rights did not exhibit significance when regressed against the outreach to women variables. This may be due to the limitations of the dataset, in that the dataset only contained countries with marginal and poor enforcement. Further research will be necessary to clarify the relationship between women's property rights and the success of Microfinance Institutions, and to determine whether future policy efforts to improve financial inclusion for women should be focused on changing the legal environment or on encouraging the enforcement of laws already in place.

This analysis is limited in several aspects, each of which points to the need for additional data gathering and research. First, the data on discriminatory property rights laws and enforcement is based on a single year (2012), which does not allow for a longitudinal study of how changes in women's property rights affect MFIs outreach to women borrowers. Second, measuring outreach to women borrowers only looks at the first step in the goal of MFIs to lift women out of poverty. Other researchers have made progress in following the recipients of MFI loans to measure the impact on women and their households (Brau, 2004). Additionally, the statistical significance of the non-financial services offered by some MFIs – women empowerment services, health services, education services, and enterprise services – indicates not only a correlation between MFIs choosing to target women borrowers and offering non-financial services but also a potential avenue for evaluating the success of MFI loan recipients.

Table 1. Variable definitions and sources

Variable Code	Variable Description	Data Source
savings	dummy =1 if MFI takes deposits	MM SP
age of mfi	number of years since MFI established	MM SP
bank	dummy =1 if legal status is bank	MM SP
credit union	dummy =1 if legal status is credit union	MM SP
nbfi	dummy =1 if legal status is nonbank financial institution	MM SP
ngo	dummy =1 if legal status is NGO	MM SP
other legal	dummy =1 if legal status is other	MM SP
rural bank	dummy =1 if legal status is rural bank	MM SP
targets women	dummy =1 if MFI targets women clients	MM SP
mfiplus	dummy =1 if MFI offers additional services (enterprise, education, health, or women empowerment)	MM SP
empowerment svcs	dummy =1 if MFI offers women empowerment services	MM SP
health svcs	dummy =1 if MFI offers health services	MM SP
education svcs	dummy =1 if MFI offers education services	MM SP
enterprise svcs	dummy =1 if MFI offers enterprise services	MM SP
% female borrowers	percent female borrowers	MM CMA
assets	assets (millions)	MM CMA
log(assets)	log of assets	MM CMA
average balance	average loan balance per borrower	MM CMA
scaled average balance	average loan balance per borrower / gni per capita	MM CMA
gross loan portfolio	gross loan portfolio (millions)	MM CMA
glp male	portion of gross loan portfolio to male borrowers (millions)	MM CMA
glp female	portion of gross loan portfolio to female borrowers (millions)	MM CMA
glp corp	portion of gross loan portfolio to legal entities (millions)	MM CMA
glp % female	percent of gross loan portfolio to female borrowers (%)	MM CMA
glp individual	portion of gross loan portfolio using individual loan methods (millions)	MM CMA
glp solidarity group	portion of gross loan portfolio using solidarity group methods (millions)	MM CMA
glp village bank	portion of gross loan portfolio using village bank methods (millions)	MM CMA
glp group	portion of gross loan portfolio using group methods (sum of solidarity group and village bank) (millions)	MM CMA
glp % group	percent of gross loan portfolio using group methods (solidarity group or village bank) (%)	MM CMA
glp majority group	dummy =1 if more than 50% of gross loan portfolio via group lending methods	MM CMA
debt ratio	liabilities to assets ratio	MM CMA

Table 1 continued.

Variable Name	Variable Description	Data Source
number borrowers	number active borrowers (thousands)	MM CMA
loans outstanding	number of loans outstanding (thousands)	MM CMA
loansout individual	number of loans outstanding using individual loan methods (thousands)	MM CMA
loansout solidarity group	number of loans outstanding using solidarity group methods (thousands)	MM CMA
loansout village bank	number of loans outstanding using village bank methods (thousands)	MM CMA
loansout group	number of loans outstanding using group methods (sum of solidarity group and village bank) (thousands)	MM CMA
loansout % group	percent of loans outstanding using group methods (%)	MM CMA
loansout majority group	dummy =1 if more than 50% of loans outstanding via group methods	MM CMA
majority group	dummy =1 if more than 50% of lending via group methods (based off info from glp_majgroup and loansout_majgroup dummies)	MM CMA
some group	dummy =1 if some group lending offered (based off info from glp_pctgroup and loansout_pctgroup variables)	MM CMA
roa	return on assets	MM CMA
equal property rights enforcement	women's property rights discriminatory practice scale = 0 = non-discriminatory enforcement	WomenStats
better property rights enforcement	women's property rights discriminatory practice scale = 1 = somewhat discriminatory enforcement	WomenStats
discriminatory property rights enforcement	women's property rights discriminatory practice scale = 2 = discriminatory enforcement)	WomenStats
equal property rights laws	women's property rights discriminatory law scale = 0 = non-discriminatory laws	WomenStats
less equal property rights laws	women's property rights discriminatory law scale = 1 = somewhat discriminatory laws	WomenStats
discriminatory property rights laws	women's property rights discriminatory law scale = 2 = discriminatory laws)	WomenStats
% female parliament	proportion of seats held by women in national parliaments (%)	WDI
pop density	population density (people per sp. km of land area)	WDI
domestic credit	domestic credit provided by financial sector (% of GDP)	WDI
gdp	GDP (current US$) (billions)	WDI
per capita gdp	GDP per capita (current US$) (thousands)	WDI

Table 2. Summary Statistics

Variables	all MFIs		target women		don't target women	
	mean	sd	mean	sd	mean	sd
% female borrowers	68.25	25.77	70.56***	25.53	49.32	19.21
glp % female	62.33	28.07	64.86***	28.09	42.15	18.12
number borrowers	111.20	412.92	119.88	435.23	40.02	102.35
scaled avg balance	0.42	0.53	0.38***	0.43	0.80	0.98
age of mfi	15.14	9.97	15.29	10.10	13.94	8.78
log(assets)	16.32	1.74	16.28	1.78	16.59	1.47
debt ratio	0.71	0.28	0.71	0.28	0.71	0.23
roa	0.01	0.12	0.01	0.13	0.02	0.06
gross loan portfolio	41.09	108.07	41.68	112.21	36.32	65.78
glp % group	42.92	43.19	46.263**	43.23	15.67	32.06
loansout % group	48.48	44.35	52.34***	44.01	16.86	33.45
majority group	0.50	0.50	0.54***	0.50	0.17	0.38
savings	0.42	0.45	0.43	0.50	0.40	0.50
mfiplus	0.74	0.44	0.79***	0.41	0.34	0.48
empowerment svcs	0.41	0.49	0.46***	0.50	0.03	0.17
health svcs	0.24	0.43	0.26**	0.44	0.06	0.24
education svcs	0.61	0.49	0.65***	0.48	0.23	0.43
enterprise svcs	0.41	0.49	0.44**	0.50	0.20	0.41
bank	0.07	0.26	0.08	0.27	0.03	0.17
credit union	0.16	0.37	0.16	0.37	0.20	0.41
nbfi	0.33	0.47	0.32	0.47	0.46	0.51
ngo	0.40	0.49	0.41	0.49	0.31	0.47
other legal	0.01	0.10	0.01	0.10	0	0
rural bank	0.02	0.12	0.02	0.13	0	0
% female parliament	22.11	10.07	22.14	9.95	21.89	11.15
pop density	193.88	265.86	208.58**	276.40	73.28	88.87
domestic credit	49.57	23.67	49.82	23.66	47.54	23.88
per capita gdp	4.24	3.72	4.07*	3.59	5.67	4.43
N	322		287		35	

*** p<0.01, ** p<0.05, * p<0.

Table 3. Summary of Women's Property Rights Scale Variable Distributions

Practice	# MFIs	% MFIs	# Countries
0 = equal enforcement	0	0%	0
1 = better enforcement	47	14.6%	8
2 = discriminatory enforcement	275	85.4%	40
Total	322	100%	48

Laws	# MFIs	% MFIs	# Countries
0 = equal laws	188	58.39%	22
1 = less equal laws	52	16.15%	6
2 = discriminatory laws	82	25.47%	20
Total	322	100%	48

Table 4. Summary of Women's Property Rights Scales and MFI count by Country[2]

	practice	laws	#MFIs		practice	laws	#MFIs
Afghanistan	2	2	3	Indonesia	2	2	2
Albania	2	0	1	Iraq	2	2	1
Argentina	1	0	5	Jordan	2	2	1
Armenia	1	0	6	Kenya	2	2	1
Azerbaijan	2	0	17	Lebanon	2	2	1
Bangladesh	2	0	17	Mali	2	2	1
Benin	2	2	5	Mexico	2	1	25
Bolivia	1	0	11	Montenegro	2	0	1
Bosnia and Herzegovina	1	0	7	Morocco	2	1	3
Brazil	1	0	5	Nepal	2	1	18
Burkina Faso	2	1	1	Nicaragua	2	0	12
Cambodia	1	0	5	Niger	2	2	1
Cameroon	2	2	2	Nigeria	2	2	3
China, People's Republic of	1	0	1	Pakistan	2	2	13
Colombia	2	0	11	Philippines	2	0	7
Cote d'Ivoire (Ivory Coast)	2	2	3	Russia	2	0	10
Dominican Republic	2	1	4	Senegal	2	2	2
Ecuador	2	0	32	Serbia	2	0	3
Egypt	2	2	1	Tajikistan	2	0	7
El Salvador	1	0	7	Tanzania	2	1	1
Guatemala	2	0	10	Turkey	2	0	1
Haiti	2	2	1	Uganda	2	2	2
Honduras	2	0	12	Yemen	2	2	1
India	2	2	36	Zambia	2	2	2

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[2] See table 3 for scale definitions

Table 5a. Heckman models using percent female borrowers

VARIABLES	stage 2 % female borrowers	stage 1 targets women	mills	stage 2 % female borrowers	stage 1 targets women	mills
better enforcement	8.825	**-0.736****		-42.60	9.279	
	(5.800)	(0.373)		(57.62)	(4,021)	
less equal laws	**26.37****	**-1.712****		-174.7	10.90	
	(7.611)	(0.529)		(306.3)	(7,560)	
discriminatory laws	**22.85****	**-1.508****		24.90	-2.914	
	(5.465)	(0.514)		(15.82)	(2,445)	
savings	3.996	-0.123		**-6.965***	-0.347	
	(5.148)	(0.399)		(4.033)	(0.807)	
age of mfi	-0.318	0.00765		**-0.280****	0.0140	
	(0.205)	(0.0174)		(0.128)	(0.0270)	
log(assets)	0.197	**-0.219****		0.425	-0.168	
	(1.252)	(0.103)		(0.807)	(0.144)	
debt ratio	5.192	-1.088		0.680	-1.640	
	(8.610)	(0.790)		(5.645)	(1.424)	
roa	0.327	-1.008		4.537	-2.681	
	(19.66)	(2.422)		(12.95)	(4.792)	
mfiplus	5.464	**1.557****		4.615	**1.889****	
	(5.753)	(0.321)		(3.637)	(0.458)	
credit union	17.52**	**-1.426***		**9.568***	-5.871	
	(8.502)	(0.833)		(5.624)	(1,087)	
nbfi	**23.05****	**-1.846****		**11.88****	-5.964	
	(8.486)	(0.830)		(5.829)	(1,087)	
ngo	**29.84****	**-2.050****		**19.85****	-6.231	
	(8.922)	(0.911)		(6.022)	(1,087)	
other legal	1.168	4.629		20.58	-5.516	
	(20.19)	(0)		(21.24)	(0)	
rural bank	14.65	2.393		3.676	-1.925	
	(14.57)	(0)		(8.748)	(0)	
% female parliament	0.161	0.0197		3.810	-0.735	
	(0.244)	(0.0176)		(5.372)	(267.4)	
pop density	**0.0141***	**0.00493****		-0.618	0.150	
	(0.00839)	(0.00173)		(0.877)	(10.46)	
domestic credit	0.126	0.00329		4.596	-1.035	
	(0.0928)	(0.00677)		(6.166)	(79.16)	
per capita gdp	0.125	-0.0370		-19.33	5.375	
	(0.682)	(0.0407)		(32.82)	(223.7)	
majority group		**1.260****			**1.278****	
		(0.361)			(0.509)	
lambda			-28.31***			-5.765
			(9.566)			(6.579)
Constant	18.61	5.752***		-53.05	28.54	
	(22.55)	(2.115)		(103.4)	(5,939)	
Country Dummies	No	No		Yes	Yes	
Observations	296	296	296	296	296	296

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 5b. Heckman models using percent gross loan portfolio to women borrowers

VARIABLES	stage 2 glp % female	stage 1 targets women	mills	stage 2 glp % female	stage 1 targets women	mills
better enforcement	5.770	**-0.736****		63.04	-5.454	
	(6.098)	(0.373)		(74.52)	(2,830)	
less equal laws	**28.07*****	**-1.712*****		**169.1****	-9.829	
	(8.002)	(0.529)		(75.02)	(2,687)	
discriminatory laws	**23.40*****	**-1.508*****		**46.34****	-5.832	
	(5.746)	(0.514)		(19.60)	(2,520)	
savings	3.054	-0.123		**-7.389***	-0.347	
	(5.412)	(0.399)		(4.428)	(0.807)	
age of mfi	-0.313	0.00765		**-0.273***	0.0140	
	(0.216)	(0.0174)		(0.141)	(0.0270)	
log(assets)	-0.936	**-0.219****		-0.598	-0.168	
	(1.316)	(0.103)		(0.887)	(0.144)	
debt ratio	7.149	-1.088		-0.563	-1.640	
	(9.053)	(0.790)		(6.198)	(1.424)	
roa	-0.668	-1.008		-4.894	-2.681	
	(20.67)	(2.422)		(14.22)	(4.792)	
mfiplus	5.764	**1.557*****		5.632	**1.889*****	
	(6.049)	(0.321)		(3.995)	(0.458)	
credit union	**15.78***	**-1.426***		7.189	-5.871	
	(8.939)	(0.833)		(6.175)	(1,087)	
nbfi	**22.52****	**-1.846****		9.951	-5.964	
	(8.921)	(0.830)		(6.400)	(1,087)	
ngo	**27.03*****	**-2.050****		**19.16*****	-6.231	
	(9.380)	(0.911)		(6.612)	(1,087)	
other legal	-16.42	4.629		2.085	-5.516	
	(21.23)	(0)		(23.32)	(0)	
rural bank	14.77	2.393		3.293	-1.925	
	(15.32)	(0)		(9.604)	(0)	
% female parliament	0.0718	0.0197		-0.658	-0.189	
	(0.257)	(0.0176)		(1.004)	(117.8)	
pop density	0.0127	**0.00493*****		0.0550	0.0680	
	(0.00882)	(0.00173)		(0.228)	(16.32)	
domestic credit	0.159	0.00329		**-1.932***	-0.200	
	(0.0976)	(0.00677)		(1.168)	(64.45)	
per capita gdp	0.452	-0.0370		**17.51****	0.715	
	(0.717)	(0.0407)		(8.759)	(287.2)	
majority group		**1.260*****			**1.278****	
		(0.361)			(0.509)	
lambda			-29.76***			-5.578
			(10.06)			(7.245)
Constant	32.48	5.752***		56.68***	16.27	
	(23.70)	(2.115)		(19.93)	(3,984)	
Country Dummies	No	No		Yes	Yes	
Observations	296	296	296	296	296	296

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 6a. Seemingly Unrelated Regression models using percent female borrowers

VARIABLES	% female borrowers	number borrowers	scaled avg balance	% female borrowers	number borrowers	scaled avg balance
better enforcement	4.966	-57.51	-0.0400	6.041	183.8	-0.126
	(4.173)	(81.17)	(0.0730)	(14.85)	(341.0)	(0.261)
less equal laws	**21.18***	**227.0**	-0.0521	**-55.62**	-321.7	-0.0720
	(5.428)	(105.6)	(0.0950)	(27.63)	(634.5)	(0.486)
discriminatory laws	**21.86***	**168.4**	**-0.223***	-3.926	267.8	-0.0382
	(3.986)	(77.54)	(0.0698)	(14.71)	(337.7)	(0.259)
savings	3.363	-77.52	0.0527	-7.030	-140.6	0.0466
	(3.775)	(73.44)	(0.0661)	(4.509)	(103.5)	(0.0794)
age of mfi	**-0.292***	-0.272	0.00296	-0.272*	1.723	0.00364
	(0.149)	(2.900)	(0.00261)	(0.143)	(3.290)	(0.00252)
log(assets)	-0.790	**119.0***	**0.0399***	0.333	**146.0***	**0.0502***
	(0.873)	(16.99)	(0.0153)	(0.895)	(20.56)	(0.0158)
debt ratio	1.203	**-207.6***	-0.0911	-0.135	**-297.8**	-0.0877
	(6.140)	(119.4)	(0.107)	(6.222)	(142.9)	(0.110)
roa	-5.085	**-612.8**	-0.0866	2.766	**-890.3***	-0.104
	(14.06)	(273.6)	(0.246)	(14.29)	(328.2)	(0.252)
mfiplus	**14.48***	71.26	-0.0465	6.154*	4.704	-0.0743
	(3.504)	(68.17)	(0.0613)	(3.552)	(81.56)	(0.0625)
credit union	**10.14***	64.76	**0.325***	8.650	121.5	**0.232**
	(5.868)	(114.1)	(0.103)	(6.175)	(141.8)	(0.109)
nbfi	**17.49***	131.4	-0.0813	**11.27***	30.16	-0.0863
	(5.977)	(116.3)	(0.105)	(6.469)	(148.5)	(0.114)
ngo	**21.97***	84.70	-0.160	**18.96***	93.94	-0.142
	(6.083)	(118.3)	(0.106)	(6.636)	(152.4)	(0.117)
other legal	0.227	-102.1	0.136	19.57	-295.4	0.0165
	(14.46)	(281.2)	(0.253)	(23.68)	(543.8)	(0.417)

Table 6a continued.

VARIABLES	% female borrowers	number borrowers	scaled avg balance	% female borrowers	number borrowers	scaled avg balance
rural bank	11.98	-108.9	-0.119	3.143	-187.2	-0.206
	(10.41)	(202.5)	(0.182)	(9.747)	(223.8)	(0.172)
% female parliament	0.283	2.346	-8.82e-05	**-1.360****	6.183	0.0137
	(0.178)	(3.453)	(0.00311)	(0.661)	(15.18)	(0.0116)
pop density	**0.0186*****	**0.451*****	**-0.000422*****	-0.00229	0.396	-0.000235
	(0.00598)	(0.116)	(0.000105)	(0.0112)	(0.257)	(0.000197)
domestic credit	**0.136****	-0.899	**-0.00228***	0.101	2.077	-0.00132
	(0.0684)	(1.331)	(0.00120)	(0.360)	(8.260)	(0.00633)
per capita gdp	-0.183	10.69	**-0.0469*****	0.136	-3.249	-0.0286
	(0.504)	(9.799)	(0.00881)	(1.002)	(23.02)	(0.0176)
Constant	**31.38***	**-1,962*****	0.281	**89.28****	**-2,484*****	-0.405
	(16.04)	(312.0)	(0.281)	(38.30)	(879.3)	(0.674)
Country Dummies	No	No	No	Yes	Yes	Yes
Observations	263	263	263	263	263	263
R-squared	0.441	0.297	0.388	0.634	0.358	0.594

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 6b. Seemingly Unrelated Regression models using percent gross loan portfolio to women borrowers

VARIABLES	glp % female	number borrowers	scaled avg balance	glp % female	number borrowers	scaled avg balance
better enforcement	1.713	-57.51	-0.0400	58.24	-776.1	-0.0998
	(4.591)	(81.17)	(0.0730)	(48.13)	(1,006)	(0.771)
less equal laws	**22.61*****	**227.0****	-0.0521	-11.13	-650.1	-0.0623
	(5.972)	(105.6)	(0.0950)	(40.41)	(844.4)	(0.647)
discriminatory laws	**22.36*****	**168.4****	**-0.223*****	6.122	-372.6	0.0690
	(4.386)	(77.54)	(0.0698)	(30.72)	(642.0)	(0.492)
savings	2.389	-77.52	0.0527	-7.452	-140.6	0.0466
	(4.154)	(73.44)	(0.0661)	(4.955)	(103.5)	(0.0794)
age of mfi	**-0.286***	-0.272	0.00296	**-0.266***	1.723	0.00364
	(0.164)	(2.900)	(0.00261)	(0.157)	(3.290)	(0.00252)
log(assets)	**-1.974****	**119.0*****	**0.0399*****	-0.687	**146.0*****	**0.0502*****
	(0.961)	(16.99)	(0.0153)	(0.984)	(20.56)	(0.0158)
debt ratio	2.956	**-207.6***	-0.0911	-1.351	**-297.8****	-0.0877
	(6.755)	(119.4)	(0.107)	(6.836)	(142.9)	(0.110)
roa	-6.358	**-612.8****	-0.0866	-6.609	**-890.3*****	-0.104
	(15.47)	(273.6)	(0.246)	(15.70)	(328.2)	(0.252)
mfiplus	**15.24*****	71.26	-0.0465	**7.122***	4.704	-0.0743
	(3.856)	(68.17)	(0.0613)	(3.903)	(81.56)	(0.0625)
credit union	8.016	64.76	**0.325*****	6.301	121.5	**0.232****
	(6.456)	(114.1)	(0.103)	(6.786)	(141.8)	(0.109)
nbfi	**16.68****	131.4	-0.0813	9.363	30.16	-0.0863
	(6.577)	(116.3)	(0.105)	(7.108)	(148.5)	(0.114)
ngo	**18.76*****	84.70	-0.160	**18.30****	93.94	-0.142
	(6.693)	(118.3)	(0.106)	(7.292)	(152.4)	(0.117)
other legal	-17.41	-102.1	0.136	1.110	-295.4	0.0165
	(15.91)	(281.2)	(0.253)	(26.03)	(543.8)	(0.417)
rural bank	11.96	-108.9	-0.119	2.777	-187.2	-0.206
	(11.45)	(202.5)	(0.182)	(10.71)	(223.8)	(0.172)

Table 6b continued.

VARIABLES	glp % female	number borrowers	scaled avg balance	glp % female	number borrowers	scaled avg balance
% female parliament	0.200	2.346	-8.82e-05	-0.922	13.58	0.00669
	(0.195)	(3.453)	(0.00311)	(1.157)	(24.17)	(0.0185)
pop density	**0.0174***	**0.451***	**-0.000422***	0.00817	-0.0770	-0.000116
	(0.00658)	(0.116)	(0.000105)	(0.0298)	(0.623)	(0.000477)
domestic credit	**0.170**	-0.899	**-0.00228***	-0.221	-1.582	-0.000164
	(0.0753)	(1.331)	(0.00120)	(0.216)	(4.515)	(0.00346)
per capita gdp	0.127	10.69	**-0.0469***	**-4.112**	8.500	-0.00881
	(0.554)	(9.799)	(0.00881)	(1.863)	(38.93)	(0.0298)
Constant	**45.90***	**-1,962***	0.281	**100.1**	**-1,858**	-0.494
	(17.65)	(312.0)	(0.281)	(41.99)	(877.4)	(0.673)
Country Dummies	No	No	No	Yes	Yes	Yes
Observations	263	263	263	263	263	263
R-squared	0.417	0.297	0.388	0.619	0.358	0.594

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

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